IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of:	§	Group Art Unit: 2154
	§	
Bernard A. Traversat, et al.	§	Examiner: Nguyen, Dustin
	§	
	§	Atty. Dkt. No.: 5681-07700
	§	P7116
	§	
Serial No. 10/055,666	§	
	§	
	§	
Filed: January 22, 2002	§	
	§	
For: RESOURCE IDENTIFIERS FOR A PEER-TO-PEER ENVIRONMENT	§	

AMENDED APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir/Madam:

This brief is submitted in response to the Notification of Non-Compliant Appeal Brief of August, 2 2007. The Notification of Non-Compliant Appeal Brief checks boxes 4 and 10 and indicates that the brief fails to identify and argue separately each dependent claim. During a subsequent telephone conversation between Examiner Nguyen and Appellants' undersigned attorney, Examiner Nguyen clarified that the issue was that several of the dependent claims were not listed in the Argument section. The Examiner also clarified that there was no issue with the Summary of Claimed Subject Matter section of the brief. Based on the Examiner's clarifications, this amended brief is submitted to correct the listing of dependent claims in the Argument section. Appellants respectfully request that the Board of Patent Appeals and Interferences consider this appeal.

I. REAL PARTY IN INTEREST

As evidenced by the assignment recorded at Reel/Frame 012529/0758, the subject application is owned by Sun Microsystems, Inc., a corporation organized and existing under and by virtue of the laws of the State of Delaware, and now having its principal place of business at 4150 Network Circle, Santa Clara, CA 95054.

II. RELATED APPEALS AND INTERFERENCES

No other appeals, interferences or judicial proceedings are known which would be related to, directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 3, 21-29, 42-47 and 50 have been canceled. Claims 1-2, 4-20, 30-41 and 48-49 and 51-79 are pending and stand finally rejected. The rejection of claims 1-2, 4-20, 30-41 and 48-49 and 51-79 is being appealed and a copy of claims 1-2, 4-20, 30-41 and 48-49 and 51-79 as currently pending is included in the Claims Appendix herein below.

IV. STATUS OF AMENDMENTS

No amendments have been submitted subsequent to the final rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Independent claim 1 is directed to a peer computing system including a plurality of peer nodes operable to couple to a network (*See, e.g.*, FIG.1A-B, 13-17, 19-30, items 104A-104F, and 200A-200G; page 7, lines 3-14). The plurality of peer nodes implement a peer-to-peer environment (*See, e.g.*, FIG 2, all items; page 14, lines 15-23) on the network according to a peer-to-peer platform (*See, e.g.*, FIG 2, all items; page 14, lines 15-23; page 15, lines 4-17).

The peer-to-peer platform includes a core layer (*See, e.g.*, FIG 2, items 120, 122, 124, 126, 128, and 130; page 14, lines 18-23 and lines 25-30; page 16, line 4 – page 17, line 23), a service layer (*See, e.g.*, FIG 2, items 140, 142, 144; page 19, line 1 – page 20, line 10), and a unique peer identifier (*See, e.g.*, FIG 2, items 140, 142, 144; page 15, line 19 – page 16, line 2; page 50, line 4-5). The core layer includes peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other (*See, e.g.*, FIG 2, item 124; FIG. 13, item 206; FIG. 14, item 208; FIGs. 15-18, all items; FIG. 31-32, items 502, 504, 522, 524; page 7, lines 3-23; page 14, lines 15-23; page 15, lines 4-17; page 17, lines 1-13), communicate with each other (*See, e.g.*, FIG 2, item 124; FIG. 13, item 206; FIG. 14, item 208; FIGs. 15-18, all items; FIG. 31-32, items 502, 504, 522, 524; page 7, lines 3-23; page 14, lines 15-23; page 15, lines 4-17; page 17, lines 1-13) and cooperate with each other to form peer groups and share content in the peer-to-peer environment (*See, e.g.*, FIGs. 13, 14, 19, items 210A-210B; page 7, lines 7-23; page 14, lines 15-23; page 15, lines 4-30; page 16, lines 4-16; page 19, line 19 – page 20, line 10; page 23, line 11 – page 24, line 8; page 29, line 24 – page 30, line 30).

The service layer includes services that are provided by the plurality of peer nodes in the peer-to-peer environment (*See, e.g.*, FIG 2, items 140, 142, 144; page 13, lines 3-17; page 19, line 1 – page 20, line 10). At least a subset of the services are operable to be used by the peer nodes in forming peer groups and participating in the peer groups (*See, e.g.*, FIGs. 13, 14, 19, items 210A-210B; page 7, lines 7-23; page 14, lines 15-23; page 15, lines 4-30; page 16, lines 4-16; page 19, line 19 – page 20, line 10; page 23, line 11 –

page 24, line 8). Additionally, each of the services is configured to be accessed by the peer nodes in accordance with at least one of the peer-to-peer platform protocols (See, e.g., page 29, line 24 – page 30, line 30).

The unique peer identifier is configured for use in distinguishing a particular peer node from others of the peer nodes and is independent of a network address of the particular peer node (See, e.g., page 15, line 19 – page 16, line 2; page 23, line 11 – page 24, line 8). Each of the peer nodes is also configured to access another of the peer nodes one the network using the unique peer identifier of the other peer node without using a network address of the other peer node (See, e.g., page 15, line 19 – page 16, line 2; page 23, line 11 – page 24, line 8; page 28, lines 13-21; page 29, lines 11-22).

Independent claim 30 is directed to a peer node including a network interface for coupling to a network and a memory including program instructions executable within the peer node (*See, e.g.*, FIG.1A-B, 13-17, 19-30, items 104A-104F, and 200A-200G; page 7, lines 3-14). The program instructions are executable within the peer node to implement, according to a peer-to-peer platform, a core layer(*See, e.g.*, FIG 2, items 120, 122, 124, 126, 128, and 130; page 14, lines 18-23 and lines 25-30; page 16, line 4 – page 17, line 23), a service layer (*See, e.g.*, FIG 2, items 140, 142, 144; page 19, line 1 – page 20, line 10), and a unique peer identifier (*See, e.g.*, FIG 2, items 140, 142, 144; page 15, line 19 – page 16, line 2; page 50, line 4-5).

The core layer includes one or more peer-to-peer platform protocols for enabling the peer node to discover other peer nodes (*See, e.g.*, FIG 2, item 124; FIG. 13, item 206; FIG. 14, item 208; FIGs. 15-18, all items; FIG. 31-32, items 502, 504, 522, 524; page 7, lines 3-23; page 14, lines 15-23; page 15, lines 4-17; page 17, lines 1-13), communicate with each other (*See, e.g.*, FIG 2, item 124; FIG. 13, item 206; FIG. 14, item 208; FIGs. 15-18, all items; FIG. 31-32, items 502, 504, 522, 524; page 7, lines 3-23; page 14, lines 15-23; page 15, lines 4-17; page 17, lines 1-13) and cooperate with each other to form peer groups and share content in the peer-to-peer environment (*See, e.g.*, FIGs. 13, 14, 19, items 210A-210B; page 7, lines 7-23; page 14, lines 15-23; page 15, lines 4-30; page

16, lines 4-16; page 19, line 19 – page 20, line 10; page 23, line 11 – page 24, line 8; page 29, line 24 – page 30, line 30).

The service layer includes services that are provided by the plurality of peer nodes in the peer-to-peer environment (*See, e.g.*, FIG 2, items 140, 142, 144; page 13, lines 3-17; page 19, line 1 – page 20, line 10). At least a subset of the services are operable to be used by the peer nodes in forming peer groups and participating in the peer groups (*See, e.g.*, FIGs. 13, 14, 19, items 210A-210B; page 7, lines 7-23; page 14, lines 15-23; page 15, lines 4-30; page 16, lines 4-16; page 19, line 19 – page 20, line 10; page 23, line 11 – page 24, line 8). Additionally, each of the services is configured to be accessed by the peer nodes in accordance with at least one of the peer-to-peer platform protocols (See, e.g., page 29, line 24 – page 30, line 30).

The unique peer identifier is configured for use in distinguishing a particular peer node from others of the peer nodes and is independent of a network address of the particular peer node (See, e.g., page 15, line 19 – page 16, line 2; page 23, line 11 – page 24, line 8). Each of the peer nodes is also configured to access another of the peer nodes one the network using the unique peer identifier of the other peer node without using a network address of the other peer node (See, e.g., page 15, line 19 – page 16, line 2; page 23, line 11 – page 24, line 8; page 28, lines 13-21; page 29, lines 11-22).

Independent claim 48 is directed to a method for implementing a peer-to-peer environment on a network that includes a plurality of peer nodes coupled to a network each implementing a core layer of a peer-to-peer platform (*See, e.g.*, FIG.1A-B, 13-17, 19-30, items 104A-104F, and 200A-200G; page 7, lines 3-1; FIG 2, all items; page 14, lines 15-23; page 15, lines 4-17).

The core layer includes peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other (*See, e.g.*, FIG 2, item 124; FIG. 13, item 206; FIG. 14, item 208; FIGs. 15-18, all items; FIG. 31-32, items 502, 504, 522, 524; page 7, lines 3-23; page 14, lines 15-23; page 15, lines 4-17; page 17, lines 1-13), communicate with

each other (*See, e.g.*, FIG 2, item 124; FIG. 13, item 206; FIG. 14, item 208; FIGs. 15-18, all items; FIG. 31-32, items 502, 504, 522, 524; page 7, lines 3-23; page 14, lines 15-23; page 15, lines 4-17; page 17, lines 1-13) and cooperate with each other to form peer groups and share content in the peer-to-peer environment (*See, e.g.*, FIGs. 13, 14, 19, items 210A-210B; page 7, lines 7-23; page 14, lines 15-23; page 15, lines 4-30; page 16, lines 4-16; page 19, line 19 – page 20, line 10; page 23, line 11 – page 24, line 8; page 29, line 24 – page 30, line 30).

Each of the peer nodes also implements, as part of the method of claim 48, a service layer (*See, e.g.*, FIG 2, items 140, 142, 144; page 19, line 1 – page 20, line 10) including services each provided by one or more of the peer nodes (*See, e.g.*, FIG 2, items 140, 142, 144; page 13, lines 3-17; page 19, line 1 – page 20, line 10). Each of the services is configured to be accessed by peer nodes in accordance with at least a subset of the peer-to-peer platform protocols (See, e.g., page 29, line 24 – page 30, line 30).

The method of claim 48 also includes assigning a unique peer identifier to each of the plurality of peer nodes (See, e.g., page 15, line 19 – page 16, line 2; page 23, line 11 – page 24, line 8). Each unique peer identifier is configured for use in distinguishing a particular peer node from other of the plurality of peer nodes and is independent of a network address of the particular peer node (*See, e.g.*, FIG 2, items 140, 142, 144; page 15, line 19 – page 16, line 2; page 50, line 4-5). The method also includes one of the peer nodes accessing another of the peer nodes using the unique peer identifier of the other peer node without using a network address of the other peer node (See, e.g., page 15, line 19 – page 16, line 2; page 23, line 11 – page 24, line 8; page 28, lines 13-21; page 29, lines 11-22).

Independent claim 66 is directed to an article of manufacture including software instructions executable to implement a plurality of peer nodes (*See, e.g.*, FIG.1A-B, 13-17, 19-30, items 104A-104F, and 200A-200G; page 7, lines 3-14) couple to a network each implementing a core layer of a peer-to-peer platform (*See, e.g.*, FIG 2, items 120, 122, 124, 126, 128, and 130; page 14, lines 18-23 and lines 25-30; page 16, line 4 – page

17, line 23). The core layer includes peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other (*See, e.g.*, FIG 2, item 124; FIG. 13, item 206; FIG. 14, item 208; FIGs. 15-18, all items; FIG. 31-32, items 502, 504, 522, 524; page 7, lines 3-23; page 14, lines 15-23; page 15, lines 4-17; page 17, lines 1-13), communicate with each other (*See, e.g.*, FIG 2, item 124; FIG. 13, item 206; FIG. 14, item 208; FIGs. 15-18, all items; FIG. 31-32, items 502, 504, 522, 524; page 7, lines 3-23; page 14, lines 15-23; page 15, lines 4-17; page 17, lines 1-13) and cooperate with each other to form peer groups and share content in the peer-to-peer environment (*See, e.g.*, FIGs. 13, 14, 19, items 210A-210B; page 7, lines 7-23; page 14, lines 15-23; page 15, lines 4-30; page 16, lines 4-16; page 19, line 19 – page 20, line 10; page 23, line 11 – page 24, line 8; page 29, line 24 – page 30, line 30).

The software instructions are also executable to implement the plurality of peer nodes each implementing a service layer (*See, e.g.*, FIG 2, items 140, 142, 144; page 19, line 1 – page 20, line 10) including services provided by the plurality of peer nodes. Each service is provided by one or more of the peer nodes and is configured to be accessed by peer nodes in accordance with at least a subset of the peer-to-peer platform protocols (*See, e.g.*, FIGs. 13, 14, 19, items 210A-210B; page 7, lines 7-23; page 14, lines 15-23; page 15, lines 4-30; page 16, lines 4-16; page 19, line 19 – page 20, line 10; page 23, line 11 – page 24, line 8).

The software instructions are further executable to implement assigning a unique peer identifier to each of the peer nodes (See, e.g., page 15, line 19 – page 16, line 2; page 23, line 11 – page 24, line 8). Each peer identifier is configured for use in distinguishing the respective peer node from others of the peer nodes and is independent of a network address of the respective peer node (*See, e.g.*, FIG 2, items 140, 142, 144; page 15, line 19 – page 16, line 2; page 50, line 4-5). Each of the peer nodes is configured to access another of the peer nodes using the unique peer identifier of the other peer node without using a network address of the other peer node (See, e.g., page 15, line 19 – page 16, line 2; page 23, line 11 – page 24, line 8; page 28, lines 13-21; page 29, lines 11-22).

The summary above describes various examples and embodiments of the claimed subject matter; however, the claims are not necessarily limited to any of these examples and embodiments. The claims should be interpreted based on the wording of the respective claims.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Claims 1-20, 30-41 and 48-79 stand rejected under the judiciary created doctrine of obviousness-type double patenting as being unpatentable over claims of U.S. Patent No. 7,065,579.

2. Claims 1, 2, 4-13, 15, 17-20, 30-37, 39, 48, 49, 51-59, 61, 63, 65-74, 76 and 78 stand finally rejected under 35 U.S.C. § 102(e) as being anticipated by Weisman et al. (U.S. Publication 2002/0112058) (hereinafter "Weisman").

3. Claims 14, 16, 38, 40, 41, 60, 62, 64, 75, 77 and 79 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Weisman in view of Ferguson et al. (U.S. Patent 6,490,618) (hereinafter "Ferguson").

VII. ARGUMENT

First Ground of Rejection

Claims 1-20, 30-41 and 48-79 stand rejected under the judiciary created doctrine of obviousness-type double patenting as being unpatentable over claims of U.S. Patent No. 7,065,579. Appellants respectfully traverse this rejection for at least the following reasons.

The Examiner supports this rejection by stating that "the applications are claiming common subject matter" and listing three claim terms that the Examiner asserts are common to both the instant application and the '579 patent. The Examiner also states that the '679 patent does not claim the service layer as in the instant application, but asserts that it would have been obvious "that the mechanism for accessing services of [the] '579 patent is … similar in functionality to the service layer of the instant application." However, stating that the applications claim "common subject mater" and similar functionality is not a proper reason for holding the claims of the present application obvious from the claims of the listed applications. The Examiner's assertions are completely conclusory.

According to MPEP 804.II.B.1, "the analysis employed in an obviousness-type double patenting determination parallels the guidelines for a 35 U.S.C. 103(a) rejection." This section of the MPEP also states that the same "factual inquires … that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are employed when making an obviousness-type double patenting analysis." MPEP 804.II.B.1 also states that the Examiner should list the differences between **each** rejected claim and the claims of the other patent/application, and for **each** difference the Examiner should give the reasons why a person of ordinary skill in the art would conclude that the invention defined in the claim is an obvious variation of the invention defined in a claim of the other patent/application.

Simply stating that the instant application and the '579 patent claim "common

subject matter" and are "similar in functionality" is not a valid reason why a person of ordinary skill in the art would conclude that the invention defined in each claim is an obvious variation of the invention defined in a claim of the other patent/application. Nor has the Examiner specifically addressed **each difference** of **each claim** of the present application compared to the claims of the other applications. Instead, the Examiner improperly lumped all the claims together and did not address each specific difference. The Examiner clearly has not met the requirements stated in MPEP 804.II.B.1 to establish a *prima facie* obviousness-type double patenting rejection.

In the Advisory Action, the Examiner presents a table to "show the similarity and differences" between Appellants' claims and the '579 patent. However, rather than listing the differences between each rejected claim and the claims of the '579 patent, the Examiner merely listed a combination of Appellants' claims 1 and 18 and claim 1 of the '579 patent. However, although the chart provided by the Examiner clearly shows differences between the claims, the Examiner did not even attempt to specifically identify all the differences and prove a *prima facie* case of obviousness in regard to <u>each</u> difference. The table presented by the Examiner in the Advisory Action clearly shows additional differences between the Appellants' claims and the claims of the '579 patent that are not addressed in any fashion by the Examiner. Even a cursory review of the Examiner's table illustrates that the Examiner has failed to address all the differences between the respective claims. For instance, the Examiner does not address the fact that Appellants' claim 1 recites a unique peer identifier which, according to the Examiner's table, is not recited in the claims of the '579 patent. In fact, the Examiner appears to have omitted several limitations of Appellants' claim 1 from the table in the Advisory Action. For example, limitations recited in Appellants' claim 1 regarding the unique peer identifier being independent of a network address of the particular peer node are not addressed (either as a similarity or a difference) in the Examiner's claim table. Nor does the Examiner's table include the limitation from Appellants' claim 1 that a peer node accessing another peer node using a unique peer identifier for the other peer node does not use a network address of the other peer node. Instead, the Examiner only discusses a processor, network interface and memory.

Moreover, even though the Examiner has rejected 1-20, 30-41 and 48-79 in the double patenting rejection, the Examiner has only attempted any analysis in regard to claims 1 and 18. Therefore the Examiner clearly failed to provide a *prima facie* double patenting rejection of claims 2-17, 19-20, 30-41 and 48-79.

Therefore, the Examiner has clearly failed to provide a pr*ima facie* double patenting rejection by failing to list **each** differences between **each** rejected claim and the claims of the other patent/application, and provide a **factual basis** establishing the obviousness of each difference. The Examiner has failed to give reasons, for **each** difference, why a person of ordinary skill in the art would conclude that the invention defined in the Appellants' claims is an obvious variation of the invention of the '579 patent. In the Advisory action the Examiner merely states that it would have been obvious to include a processor, network interface and memory in Appellants' claims because it "would enable the plurality of peer nodes to communicate and exchange information with each other." However, the Examiner's stated motivation is clearly a generic statement of peer node functionality that does not provide any motivation for the specific differences pointed out by the Examiner (e.g., a processor, network interface and memory). Nor does the Examiner's reasoning address numerous other differences between the claims.

Accordingly, Appellants respectfully request removal of the double patenting rejection of claims 1-20, 30-41 and 48-79.

Second Ground of Rejection

Claims 1, 2, 4-13, 15, 17-20, 30-37, 39, 48, 49, 51-59, 61, 63, 65-74, 76 and 78 stand finally rejected under 35 U.S.C. § 102(e) as being anticipated by Weisman et al. (U.S. Publication 2002/0112058) (hereinafter "Weisman"). Appellants respectfully traverse this rejection for at least the following reasons.

Weisman is not prior art to the present application.

The rejection is improper because Weisman is not a prior art reference. More specifically, the Weisman publication was filed on June 1, 2001, after Applicants' priority date of April 24, 2001. No benefit claim to an earlier application was ever perfected in Weisman. Therefore, the rejection is improper since Weisman is not prior art.

Additional arguments for different groups of claims are addressed under their respective subheadings as follows.

Claims 1, 4, 7, 9, 13, 18, 30, 33, 36, 37, 39, 48, 54, 56, 58, 59, 61, 63, 66, 69, 71, 73, 74, and 76:

Weisman fails to disclose that each of the plurality of peer nodes is further configured to access another of the plurality of peer nodes on the network using the unique peer identifier of the other peer node, wherein the peer node *does not use a network address* of the other peer node to access the other peer node. The Examiner cites paragraphs 863-904 of Weisman. However, the cited passage does not describe a peer node accessing another peer node using the unique peer identifier of the other peer node, wherein the peer node does not use a network address of the other peer node to access the other peer node. Instead, this passage describes the contents of the NOTIFY multicast message that a device broadcasts when added to the network.

Weisman teaches that to access another device, messages are sent to the device's control URL, which is a combination of the network URL of the device and a unique identifier for the particular target service on the device. Specifically, Weisman teaches that a service's control URL includes the path to the device, the UDN of the device, the service ID and a randomly generated string (Weisman, paragraphs 122, 130-137, 815, and 1148 - 1150). Since a device's control URL is not independent of, and clearly uses,

the network address of the device, Weisman fails to teach a peer node accessing another peer node using the unique peer identifier of the other peer node, wherein the peer node *does not use a network address* of the other peer node to access the other peer node.

In the response to arguments of the Final Office Action and the Advisory Action, the Examiner cites paragraphs 45, 122, 131-137, 183 and 376 of Weisman and describes how Weisman's Web Server invokes an automation proxy for a service to cause the service to execute a control request. The Examiner states Weisman's device host API sets up control URL's of hosted devices to point to the Web Server. The Examiner further describes how Weisman's system format the URL and uuid that make up the address used to invoke control requests on the service object.

The Examiner states that "Weisman discloses the Device Host API sets up the control URLs of hosted devices 108-110 to point to the Web Server, when the Web Server receives an HTTP request *with one of the hosted devices' control URLs,* the Web Server invoke[s] the Automation Proxy for the service to execute the control request" (italics added). The Examiner also states (in the Advisory Action), "Weisman uses URL address for peer accessing, not the network address as claimed, as broadly and reasonably interpreted, as Internet Protocol (IP) or MAC addresses". Thus, the Examiner contends that Weisman's URLs cannot be "broadly and reasonably interpreted" as a network addresses.

However, Weisman teaches that his system uses relative URLs that are then appended to a base URL from the device description (Weisman, paragraphs 61, 1009, 1022, 1035, 1043). Elsewhere Weisman states that control messages are sent to the control URL for the service that is provided in the device description (paragraph 0815). Weisman also teaches that the base URL is a network address. For instance, when describing how a node sends a requested action to a device, Weisman describes a "[d]omain name or IP address … of URL for control [of] this service" that Weisman describes as a "control URL sub element from device description" (paragraphs 1279 – 1287).

Weisman also teaches that when a device is added to the network it sends a discovery message that includes a URL for communicating with the device that is "sent in a LOCATION header" (paragraphs 853-857). Weisman states that a LOCATION header may contain an IP address or a domain name (paragraphs 878-879). In Weisman's system a network address (URL) is used when one peer is accessing another. The fact that Weisman's system also includes other information, such as the uuid does not change the fact that a network address is also used. Thus, Weisman clearly teaches the use of network addresses to communicate with other nodes and devices.

Anticipation requires the presence in a single prior art reference disclosure of each and every limitation of the claimed invention, arranged as in the claim. M.P.E.P 2131; *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984). The **identical** invention must be shown in as complete detail as is contained in the claims. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). As discussed above, Weisman fails to disclose where each of the plurality of peer nodes is further configured to access another of the plurality of peer nodes on the network using the unique peer identifier of the other peer node, wherein the peer node does not use a network address of the other peer node to access the other peer node. Therefore, Weisman cannot be said to anticipate claim 1.

Claims 2, 6, 31, 32, 49, 51, 53, 67 and 68:

Weisman fails to disclose where each of the plurality of peer nodes is further configured to bind a peer identifier corresponding to the particular peer node to the network address of the particular peer node. The Examiner cites paragraphs 181-124 of Weisman. The cited passage describes the addressing within Universal Plug-n-Play (UPnP) networking. Weisman teaches that a device may use an automatic IP addressing facility to obtain an address. However, the cited passage does not mention any peer nodes configured to *bind a peer identifier* corresponding to the particular peer node *to the network address* of the particular peer node. Instead, the cited passage only describes

how a peer node may automatically obtain, such as via DHCP, an IP address. Weisman does not describe any peer node binding a peer identifier to a network address of a particular peer node.

In the response to arguments of the Final Office Action, the Examiner cites paragraphs 833 – 837 of Weisman referring to Weisman's mapping of a device's DNS name to its IP address. However, the cited passages make no mention of a peer node binding a peer identifier of another peer node to the network address of the other peer node. Instead, the cited passage of Weisman describes how a computer that needs to contact a device may use a DNS query to discover the devices IP address. Merely discovering an IP address of another device cannot be considered *binding* a peer identifier to a network address. Weisman states that the DNS mappings are used to ensure that the device can still be found even when the IP address changes (Weisman, paragraphs 834 – 835). Thus, Weisman teaches that a computer should lookup IP addresses using a DNS server specifically because IP address may change and the devices name can be used to lookup a changed IP address. Weisman's peers clearly do not **bind** network address to peer identifiers.

Claims 5 and 52:

Weisman also fails to disclose wherein, to access the other peer node, the unique peer identifier of the other peer node is configured to be mapped to one of the one or more network interfaces of the other peer node. The Examiner cites paragraphs 7 and 63 of Weisman. However, neither of these paragraphs describes a peer identifier being mapped to a *network interface* of the other peer node. Instead, paragraph 7 describes a device hosting framework that listens for control requests and translates control requests into calls to the service objects' programming interfaces (e.g. IDispatch interfaces). However, IDispatch interfaces are not network interfaces. Paragraph 63 teaches that service interfaces are written in UTL in service descriptions and how a hosted device provides a COM object that exposes the service's interface. Thus, the Examiner has failed to cite any portion of Weisman that discloses that the unique peer identifier of the

other peer node is configured to be mapped to one of the one or more network interfaces of the other peer node. Moreover, nowhere does Weisman describe that a service's UDN, which the Examiner equates to the unique peer identifier Appellants' claims, is configured to be mapped *to a network interface* of a peer node.

In the response to arguments of the Final Office Action, the Examiner cites paragraphs 36, 37, 67 and 68 of Weisman. The Examiner argues that Weisman's system translates control requests into calls to a service's IDispatch interfaces. However, translating control requests into calls to the service objects' programming interfaces (e.g. IDispatch interfaces) does not disclose a unique peer identifier of a peer node configured to be *mapped to a network interface* of the peer node. A programming interface is not a network interface. Moreover, it is well known that IDispatch interfaces, such as those taught by Weisman, provide a programmatic interface to find out what properties and method are supported by an object-oriented programming object.

Additionally, Weisman teaches that the Device Host listens for and receives control requests and then locates and calls the IDispatch interface for the hosted service. Weisman describes a hosted device as a software module that executes on the same machine as the Device Host. Thus, the translation referred to by the Examiner clearly involves the Device Host programmatically invoking the service interface of a hosted device. The Device Host does not translate the control into a network interface nor does it map a UDN to a network interface.

Thus, Weisman clearly fails to disclose a unique peer identifier mapped to one of the one or more network interfaces. Therefore, Weisman does not anticipate Appellants' claim.

Claims 8, 55 and 70:

Weisman fails to disclose wherein each of the plurality of peer nodes is assigned a different unique peer identifier in accordance with the peer-to-peer platform for *each of*

the one or more peer groups in which the peer node is a member peer. The Examiner refers to Weisman's container identifier, citing paragraphs 85, 105 and 489. However, Weisman only teaches that a container is a string that identifies the group to which the device belongs and that all devices with the same container identifier will be hosted in the same process. Nowhere does Weisman mention that each peer node is assigned a *different* unique peer identifier *for each of the peer groups* in which the peer node is a member peer. Weisman merely states that a container identifier identifies the group to which a device belongs. Weisman clearly fails to disclose wherein each of the plurality of peer nodes is assigned a different unique peer identifier in accordance with the peer-to-peer platform for each of the one or more peer groups in which the peer node is a member peer.

In the response to arguments of the Final Office Action, the Examiner further cites paragraphs 1513 and 1539 of Weisman and refers to Weisman's event subscription process. Weisman teaches that a service may publish event messages to interested control points, called subscribers (paragraph 1497). The Examiner refers to the fact that if a subscription expires, the subscription identifier becomes invalid and the control point sends a subscription message to get a new subscription identifier. First of all, Weisman's subscription identifiers have nothing to do with the container identifiers that the Examiner relies upon in the rejection of claim 8. Furthermore, the fact that each subscriber is provided with a unique subscription identifier has no relevance to a peer node being assigned a different unique peer identifier *for each peer group* in which the peer node is a member. Weisman's event publishing does not have anything to do with peer group membership.

Claims 10, 11, 35, 57 and 72:

Weisman fails to disclose that a peer node hosts a plurality of instances of a resource, where each of the instances of the resource is hosted for **a different one of the plurality of peer groups**. The Examiner refers to Weisman's web server identifying service instances, citing paragraphs 131 – 137. This passage describes the formatting and

use of Weisman's control URLs. For example, Weisman teaches in cited passage that his web server locates a service implementation using the service instance name from the control URL.

However, Weisman does not mention, either at the Examiner's cited passage or elsewhere, anything regarding a peer node hosting multiple instances of a resource, where each instance is hosted for a *different peer group*. In fact, the cited passage does not mention peer groups at all. Nor does the cited passage mention anything regarding subscriptions, which the Examiner equates to the peer groups of Appellants' claims. Thus, Weisman fails to disclose a peer node hosting a plurality of instances of a resource, where each of the instances is hosted for a different peer group.

Claims 12, 15 and 17:

Weisman fails to disclose **a peer advertisement format for describing and publishing advertisements for peer nodes in the peer-to-peer environment, wherein each of the plurality of peer nodes is further configured to generate a peer advertisement for the particular peer node, wherein the peer advertisement includes a peer identifier for the peer node**. The Examiner cites paragraphs 848-860 and relies on Weisman's discovery advertisement. However, *each peer node* of Weisman's system is not configured to generate a peer advertisement for the particular peer node. The Examiner's cited passage describes how when a device is added to Weisman's network, the discovery protocol allows that device to advertise ***its*** services by repeatedly multicasting discovery messages that "advertise the full extent of its capabilities" (Weisman, paragraph 849). Weisman does not mention anything about *each peer node* generating a peer advertisement for a particular peer node, as recited in Appellants' claim.

According to the Examiner's line of reasoning, each peer of Weisman's system would have to generate an advertisement for a *particular* peer node. Instead, however, Weisman teaches (such as at the Examiner's cited passage) a discovery advertisement

protocol in which each device repeatedly multicasts an advertisement of *its, respective, capabilities*. Weisman does not discuss, either at the cited passage or elsewhere, anything regarding each peer generating an advertisement for a particular peer.

Claims 19 and 65:

Weisman fails to disclose **where the unique peer identifier of one the peer nodes is formatted in accordance with a canonical representation scheme and where the unique peer identifier of a different one of the peer nodes is formatted in accordance with a *different* canonical representation scheme**. The Examiner cites paragraphs 54 and 1100-1106 and refers to Weisman's device description scheme. Weisman teaches that the schema for UPnP device descriptions is known as the UPnP Template Language (UTL). Weisman's UTL is used to generate UPnP device descriptions.

The Examiner equates Weisman's control URLs to the unique peer identifier's of Appellants' claims. While Weisman's UTL does specify that a device description may include several different URLs, it does not specify the formatting for any particular URL. Thus, Weisman's UTL does not represent a canonical representation scheme according to which a unique peer identifier formatted. Instead, at paragraph 131, Weisman describes a proprietary formatting of URLs.

Furthermore, nowhere does Weisman mention anything about different canonical representation schemes used to format unique peer identifiers for different peer nodes. In fact, **Weisman teaches away** from using different schemes to format different peer identifiers. Weisman teaches a single formatting scheme for his control URLs, which the Examiner equates to the unique peer identifiers of Appellant's claims. By teaching the use of a single formatting scheme for all control URLs, Weisman clearly teaches away from formatting different peer identifiers according to different canonical representation schemes.

Claim 20:

Weisman fails to disclose where the **member peers in one peer group are configured to use one canonical representation scheme to format unique peer identifiers within the peer group and where members of another peer group are configured to use a different canonical representation scheme to format unique peer identifiers within the different peer group**. The Examiner cites paragraphs 349-355 and 880-995, where Weisman discusses the NOTIFY message of his event submission architecture. The Examiner is apparently rejecting claim 20 in view of the fact that Weisman's NOTIFY message may include multiple URIs for different devices. However, even a cursory reading of the cited passage demonstrates that Weisman uses a single formatting scheme for the URIs in this NOTIFY message. For example, at paragraphs 882, 884, 886, 896, 898, 900 and 902, Weisman includes respective example URIs (e.g., "upnp:rootdevice", "uuid:schemas-upnp-org:device:device-type:device-UUID", "urn:schemas-upnp-org:device:device-type", "urn:schema-upnp-org:service:service-type", "uuid:device-UUID::upnp:rootdevice", "uuid:device-UUID::urn:schemas-upnp-org:device:deviceType:v", and "uuid:device-UUID::urn:schemas-upnp-org:service:serviceType:v"). However, all of the URIs discussed in the cited passages are formatted according to a single formatting scheme. Just because the different URIs may include different elements does not mean that they are formatted according to different formatting schemes. A single formatting scheme may easily encompass various elements, as does Weisman's.

Moreover, the URIs of Weisman's NOTIFY message have nothing to do with member peers of *different peer groups* formatting peer identifiers according to different canonical representation schemes. In contrast, Weisman teaches, "[w]hen a device is added to the network, its sends a multicast request with method NOTIFY." Thus, Weisman teaches that his NOTIFY messages, including the URI's upon which the Examiner relies in the rejection, when a device is added to the network. Weisman does not describe member nodes of different peer groups formatting peer identifiers using different versions of the URI's used in NOTIFY messages.

Weisman clearly fails to disclose **member peers in one peer group configured to use one canonical representation scheme to format unique peer identifiers within the peer group and member peers of another peer group configured to use a different canonical representation scheme to format unique peer identifiers within the different peer group**.

Third Ground of Rejection

Claims 14, 16, 38, 40, 41, 60, 62, 64, 75, 77 and 79 stand finally rejected under 35 U.S.C. § 103(a) as being unpatentable over Weisman in view of Ferguson et al. (U.S. Patent 6,490,618) (hereinafter "Ferguson"). Appellants traverse this rejection for at least the reasons presented above regarding their respective, independent claims.

CONCLUSION

For the foregoing reasons, it is submitted that the Examiner's rejection of claims 1-2, 4-20, 30-41 and 48-49 and 51-79 was erroneous, and reversal thereof is respectfully requested.

The Commissioner is authorized to any fees that may be due to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5681-07700/RCK.

Respectfully submitted,

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VIII. CLAIMS APPENDIX

The claims on appeal are as follows.

1. A peer computing system, comprising:

a plurality of peer nodes operable to couple to a network;

wherein the plurality of peer nodes are configured to implement a peer-to-peer environment on the network according to a peer-to-peer platform comprising:

a core layer comprising one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment;

a service layer comprising one or more services each provided by one or more of the plurality of peer nodes in the peer-to-peer environment, wherein at least a subset of the services are operable to be used by the plurality of peer nodes in forming the peer groups and participating in the peer groups, and wherein each of the one or more services are configured to be accessed by the plurality of peer nodes in accordance with at least one of the one or more peer-to-peer platform protocols; and

a unique peer identifier, wherein the peer identifier is configured for use in distinguishing a particular peer node from others of the plurality of peer nodes in the peer-to-peer environment, wherein the peer

identifier is independent of a network address of the particular peer node;

wherein each of the plurality of peer nodes is further configured to access another of the plurality of peer nodes on the network using the unique peer identifier of the other peer node, wherein the peer node does not use a network address of the other peer node to access the other peer node.

2. The peer computing system as recited in claim 1, wherein each of the plurality of peer nodes is further configured to bind a peer identifier corresponding to the particular peer node to the network address of the particular peer node.

4. The peer computing system as recited in claim 1, wherein, to access the other peer node, the unique peer identifier of the other peer node is configured to be mapped to a network address of the other peer node.

5. The peer computing system as recited in claim 1, wherein, to access the other peer node, the unique peer identifier of the other peer node is configured to be mapped to one of one or more network interfaces of the other peer node.

6. The peer computing system as recited in claim 2, wherein each of the plurality of peer nodes is further configured to:

unbind the peer identifier corresponding to the peer node from the network address;

obtain a new network address; and

bind the peer identifier corresponding to the peer node to the new network address.

7. The peer computing system as recited in claim 1, wherein each peer identifier is further configured for use in determining a particular peer group in which a particular peer node corresponding to the peer identifier is a member peer.

8. The peer computing system as recited in claim 1, wherein each of the plurality of peer nodes is further configured to participate as a member peer in one or more peer groups in the peer-to-peer environment, and wherein each of the plurality of peer nodes is assigned a different unique peer identifier in accordance with the peer-to-peer platform for each of the one or more peer groups in which the peer node is a member peer.

9. The peer computing system as recited in claim 1, wherein each of the plurality of peer nodes is further configured to:

participate as a member peer in a plurality of peer groups in the peer-to-peer environment;

receive a message from another of the plurality of peer nodes, wherein the other peer node is a member peer in a particular one of the plurality of peer groups in which the peer node is a member peer, and wherein the message includes a peer identifier of the other peer; and

determine the particular one of the plurality of peer groups in which the other peer is a member peer from the peer identifier of the other peer.

10. The peer computing system as recited in claim 9, wherein the message specifies a resource hosted by the peer node, wherein the peer node hosts a plurality of instances of the resource, wherein each of the instances of the resource is hosted for a different one of the plurality of peer groups, and wherein the peer node is further configured to access in accordance with the message a particular one of the instances of the resource hosted for the particular one of the plurality of peer groups in which the

other peer node is a member peer.

11. The peer computing system as recited in claim 10, wherein the resource is a service, and wherein the instance of the resource is an instance of the service implemented on the peer node.

12. The peer computing system as recited in claim 1, wherein the peer-to-peer platform defines a peer advertisement format for describing and publishing advertisements for peer nodes in the peer-to-peer environment, wherein each of the plurality of peer nodes is further configured to generate a peer advertisement for the particular peer node, wherein the peer advertisement includes a peer identifier for the peer node.

13. The peer computing system as recited in claim 1, further comprising a plurality of resources accessible by the plurality of peer nodes in the peer-to-peer environment, wherein each resource corresponds to a unique resource identifier configured for use in distinguishing the particular resource from other resources of the plurality of resources in the peer-to-peer environment.

14. The peer computing system as recited in claim 13, wherein the plurality of resources include one or more of peer groups, content, services, applications, pipes, and pipe endpoints, wherein pipes are communications channels between two or more peer nodes in the peer-to-peer environment, and wherein pipe endpoints are network interfaces on the peer nodes that are configured to be bound to the pipes to establish the communications channels.

15. The peer computing system as recited in claim 1, wherein each of the one or more peer-to-peer platform protocols defines one or more advertisement formats for describing and publishing advertisements for resources in the peer-to-peer environment, wherein each of the plurality of peer nodes is further configured to:

host a plurality of resources accessible by the plurality of peer nodes in the peer-to-peer environment; and

generate a resource advertisement for each resource corresponding to the particular peer node in accordance with the peer-to-peer platform, wherein at least a subset of the resource advertisements each include a peer identifier of the peer node.

16. The peer computing system as recited in claim 15, wherein the resources include one or more of peer nodes, peer groups, content, services, applications, pipes, and pipe endpoints, wherein pipes are communications channels between two or more peer nodes in the peer-to-peer environment, and wherein the pipe endpoints are network interfaces on the peer nodes that are configured to be bound to the pipes to establish the communications channels.

17. The peer computing system as recited in claim 15, wherein each resource is assigned a unique resource identifier configured for use in distinguishing the particular resource from other resources in the peer-to-peer environment, and wherein each resource advertisement further includes a resource identifier assigned to a particular resource corresponding to the resource advertisement.

18. The peer computing system as recited in claim 1, wherein the one or more peer-to-peer platform protocols includes one or more of:

a peer discovery protocol for discovering resources in the peer-to-peer environment, wherein the resources include one or more of peer nodes, peer groups, content, services, applications, pipes, and pipe endpoints, wherein pipes are communications channels between two or more peer nodes in the peer-to-peer environment, and wherein pipe endpoints are network interfaces on the peer nodes that are configured to be bound to the pipes to establish the communications channels;

a peer membership protocol for use by the peer nodes in applying for membership in the peer groups;

a peer resolver protocol for use in sending search queries from one peer group member to another peer group member;

a peer information protocol for enabling the peer nodes to obtain information about capabilities and status of other peer nodes in the peer-to-peer environment;

a pipe binding protocol for use in finding the physical location of pipe endpoints and binding the pipe endpoints, wherein pipes are communications channels between two or more peer nodes in the peer-to-peer environment, and wherein pipe endpoints are network interfaces on the peer nodes that are configured to be bound to the pipes to establish the communications channels; and

an endpoint routing protocol for enabling the peer nodes to request peer routing information to reach the other peer nodes.

19. The peer computing system as recited in claim 1, wherein the unique peer identifier of one of the plurality of peer nodes is formatted in accordance with a canonical representation scheme, and wherein the unique peer identifier of a different one of the plurality of peer nodes is formatted in accordance with a different canonical representation scheme.

20. The peer computing system as recited in claim 1, wherein the one of the plurality of peer nodes is a member peer in a peer group, wherein member peers in the peer group are configured to use the canonical representation scheme to format unique peer identifiers within the peer group, wherein the different one of the plurality of peer

nodes is a member peer in a different peer group, and wherein member peers in the different peer group are configured to use the different canonical representation scheme to format unique peer identifiers within the different peer group.

30. A peer node, comprising:

a network interface for coupling to a network;

a memory comprising program instructions, wherein the program instructions are executable within the peer node to implement, according to a peer-to-peer platform:

a core layer comprising one or more peer-to-peer platform protocols for enabling the peer node to discover other peer nodes, communicate with the other peer nodes, and cooperate with the other peer nodes to form peer groups and share content in a peer-to-peer environment on the network;

a service layer comprising one or more services in the peer-to-peer environment, wherein at least a subset of the services are operable to be used by the peer node and the other peer nodes in forming the peer groups and participating in the peer groups, and wherein each of the one or more services are configured to be accessed in accordance with at least one of the one or more peer-to-peer platform protocols; and

a unique peer identifier in accordance with the peer-to-peer platform, wherein the peer identifier is configured for use in distinguishing the peer node from other peer nodes in the peer-to-peer

environment, wherein the peer identifier is independent of a network address for the peer node;

wherein the peer node is configured to access one of the other peer nodes using a unique peer identifier of the one of the other peer nodes, wherein the peer node does not use a network address of the one of the other peer nodes to access the one of the other peer nodes.

31. The peer node as recited in claim 30, wherein the peer node is further configured to bind the peer identifier to the network address of the peer node.

32. The peer node as recited in claim 31, wherein the peer node is further configured to:

unbind the peer identifier from the network address;

obtain a new network address; and

bind the peer identifier to the new network address.

33. The peer node as recited in claim 30, wherein the peer node is further configured to:

participate as a member peer in a plurality of peer groups in the peer-to-peer environment;

receive a message from another peer node, wherein the other peer node is a member peer in a particular one of the plurality of peer groups in which the peer node is a member peer, and wherein the message includes a peer identifier of the other peer; and

determine the particular one of the plurality of peer groups in which the other peer is a member peer from the peer identifier of the other peer.

34. The peer node as recited in claim 30, wherein the peer node is further configured to:

obtain a unique peer identifier of a different peer node on the network; and

access the different peer node on the network using the unique peer identifier of the other peer node;

wherein the peer node is not aware of a network address of the different peer node.

35. The peer node as recited in claim 31, wherein the message specifies a service hosted by the peer node, wherein the peer node hosts a plurality of instances of the service, wherein each of the instances of the service is hosted for a different one of the plurality of peer groups, and wherein the peer node is further configured to provide the message to a particular one of the instances of the service hosted for the particular one of the plurality of peer groups in which the other peer node is a member peer.

36. The peer node as recited in claim 30, wherein the peer-to-peer platform defines a peer advertisement format for describing and publishing advertisements for peer nodes in the peer-to-peer environment, wherein the peer node is further configured to generate a peer advertisement in accordance with the peer advertisement format, wherein the peer advertisement includes a peer identifier for the peer node.

37. The peer node as recited in claim 30, further comprising a plurality of resources accessible by peer nodes in the peer-to-peer environment, wherein the peer node is further configured to assign each of the plurality of peer nodes a unique resource identifier configured for use in distinguishing the particular resource from other resources

in the peer-to-peer environment.

38. The peer node as recited in claim 37, wherein the plurality of resources include one or more of content, services, applications, pipes, and pipe endpoints, wherein pipes are communications channels between two or more peer nodes in the peer-to-peer environment, and wherein pipe endpoints are network interfaces on the peer node configured to be bound to the pipes to establish the communications channels.

39. The peer node as recited in claim 30, wherein each of the one or more peer-to-peer platform protocols defines one or more advertisement formats for describing and publishing advertisements for resources in the peer-to-peer environment, wherein the peer node is further configured to generate a resource advertisement for at least a subset of a plurality of resources on the peer node, wherein the resource advertisements each include the peer identifier for the peer node.

40. The peer node as recited in claim 39, wherein the plurality of resources include one or more of content, services, applications, pipes, and pipe endpoints, wherein pipes are communications channels between two or more peer nodes in the peer-to-peer environment, and wherein pipe endpoints are network interfaces on the peer node configured to be bound to the pipes to establish the communications channels.

41. The peer node as recited in claim 30, wherein the one or more peer-to-peer platform protocols includes a peer discovery protocol for discovering resources in the peer-to-peer environment, wherein the resources include one or more of peer nodes, peer groups, content, services, applications, pipes, and pipe endpoints, wherein pipes are communications channels between two or more peer nodes in the peer-to-peer environment, and wherein pipe endpoints are network interfaces on peer nodes that are configured to be bound to the pipes to establish the communications channels.

48. A method for implementing a peer-to-peer environment on a network, the

method comprising:

a plurality of peer nodes coupled to a network each implementing a core layer of a peer-to-peer platform, wherein the core layer comprises one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in the peer-to-peer environment;

the plurality of peer nodes each implementing a service layer comprising one or more services each provided by one or more of the plurality of peer nodes in the peer-to-peer environment, wherein each of the one or more services are configured to be accessed by peer nodes in the peer-to-peer environment in accordance with at least a subset of the one or more peer-to-peer platform protocols; and

assigning a unique peer identifier to each of the plurality of peer nodes, wherein each unique peer identifier is configured for use in distinguishing a particular peer node from others of the plurality of peer nodes in the peer-to-peer environment, wherein the peer identifier is independent of a network address of the particular peer node;

one of the plurality of peer nodes accessing another of the plurality of peer nodes on the network using the unique peer identifier of the other peer node, wherein the peer node does not use a network address of the other peer node to access the other peer node.

49. The method as recited in claim 48, further comprising binding the peer identifier of each of the plurality of peer nodes to the network address of the respective peer node.

51. The method as recited in claim 49, wherein, in said accessing the other peer node, the method further comprises mapping the unique peer identifier of the other peer node to a network address of the other peer node.

52. The method as recited in claim 49, wherein, in said accessing the other peer node, the method further comprises mapping the unique peer identifier of the other peer node to one of one or more network interfaces of the other peer node.

53. The method as recited in claim 49, further comprising:

one of the plurality of peer nodes unbinding the peer identifier corresponding to the peer node from the network address of the peer node;

the peer node obtaining a new network address; and

the peer node binding the peer identifier corresponding to the peer node to the new network address.

54. The method as recited in claim 48, further comprising:

at least a subset of the plurality of peer nodes accessing at least a subset of the core services in accordance with at least one of the one or more peer-to-peer platform protocols to form one or more peer groups in the peer-to-peer environment;

wherein each peer identifier is further configured for use in determining a particular one of the one or more peer groups in which a particular peer node corresponding to the peer identifier is a member peer.

55. The method as recited in claim 48, further comprising:

at least a subset of the plurality of peer nodes accessing at least a subset of the core services in accordance with at least one of the one or more peer-to-peer platform protocols to form one or more peer groups in the peer-to-peer environment; and

wherein each of the plurality of peer nodes is assigned a different unique peer identifier in accordance with the peer-to-peer platform for each of the one or more peer groups in which the peer node is a member peer.

56. The method as recited in claim 48, further comprising:

at least a subset of the plurality of peer nodes accessing at least a subset of the core services in accordance with at least one of the one or more peer-to-peer platform protocols to form one or more peer groups in the peer-to-peer environment;

one of the at least a subset of the plurality of peer nodes receiving a message from another of the at least a subset of the plurality of peer nodes, wherein the other peer node is a member peer in a particular one of the one or more peer groups in which the peer node is a member peer, and wherein the message includes a peer identifier of the other peer; and

determining the particular one of the plurality of peer groups in which the other peer is a member peer from the peer identifier of the other peer.

57. The method as recited in claim 56, wherein the message specifies a service hosted by the peer node, wherein the peer node hosts a plurality of instances of the service, wherein each of the instances of the service is hosted for a different one of the one or more peer groups of which the peer node is a member peer, and wherein the method further comprises the peer node providing the message to a particular one of the

instances of the service hosted for the determined particular one of the one or more peer groups in which the other peer node is a member peer.

58. The method as recited in claim 48, wherein the peer-to-peer platform defines a peer advertisement format for describing and publishing advertisements for peer nodes in the peer-to-peer environment, wherein the method further comprises generating a peer advertisement for one of the plurality of peer nodes, wherein the peer advertisement includes a peer identifier for the peer node.

59. The method as recited in claim 48, further comprising at least a subset of the plurality of peer nodes hosting a plurality of resources accessible by the plurality of peer nodes in the peer-to-peer environment, wherein each resource is assigned a unique resource identifier configured for use in distinguishing the particular resource from other resources in the peer-to-peer environment.

60. The method as recited in claim 59, wherein the plurality of resources include one or more of peer groups, content, services, applications, pipes, and pipe endpoints, wherein pipes are communications channels between two or more peer nodes in the peer-to-peer environment, and wherein pipe endpoints are network interfaces on the peer nodes that are configured to be bound to the pipes to establish the communications channels.

61. The method as recited in claim 48, wherein the one or more peer-to-peer platform protocols define one or more advertisement formats for describing and publishing advertisements for resources in the peer-to-peer environment, the method further comprising:

at least a subset of the plurality of peer nodes hosting a plurality of resources accessible by the plurality of peer nodes in the peer-to-peer environment; and

generating a resource advertisement for each of the plurality of resources in accordance with the one or more peer-to-peer platform protocols, wherein at least a subset of the resource advertisements each include one or more peer identifiers each corresponding to one of the plurality of peer nodes associated with the particular resource corresponding to the particular resource advertisement.

62. The method as recited in claim 61, wherein the resources include one or more of peer nodes, peer groups, content, services, applications, pipes, and pipe endpoints, wherein pipes are communications channels between two or more peer nodes in the peer-to-peer environment, and wherein the pipe endpoints are network interfaces on the peer nodes that are configured to be bound to the pipes to establish the communications channels.

63. The method as recited in claim 61, wherein each resource is assigned a unique resource identifier configured for use in distinguishing the particular resource from other resources in the peer-to-peer environment, and wherein each resource advertisement further includes a resource identifier assigned to a particular resource corresponding to the resource advertisement.

64. The method as recited in claim 48, wherein the one or more peer-to-peer platform protocols include one or more of:

a peer discovery protocol for discovering resources in the peer-to-peer environment, wherein the resources include one or more of peer nodes, peer groups, content, services, applications, pipes, and pipe endpoints, wherein pipes are communications channels between two or more peer nodes in the peer-to-peer environment, and wherein pipe endpoints are network interfaces on the peer nodes that are configured to be bound to the pipes to establish the communications channels; and

a peer membership protocol for use by the peer nodes in applying for membership in the peer groups.

65. The method as recited in claim 48, wherein, in said assigning a unique peer identifier to each of the plurality of peer nodes, the method further comprises:

formatting the unique peer identifiers of a subset of the plurality of peer nodes according to a canonical representation scheme; and

formatting the unique peer identifiers of a different subset of the plurality of peer nodes according to a different canonical representation scheme.

66. An article of manufacture comprising software instructions executable to implement:

a plurality of peer nodes coupled to a network each implementing a core layer of a peer-to-peer platform, wherein the core layer comprises one or more peer-to-peer platform protocols for enabling the plurality of peer nodes to discover each other, communicate with each other, and cooperate with each other to form peer groups and share content in a peer-to-peer environment;

the plurality of peer nodes each implementing a service layer comprising one or more services each provided by one or more of the plurality of peer nodes in the peer-to-peer environment, wherein each of the one or more services are configured to be accessed by peer nodes in the peer-to-peer environment in accordance with at least a subset of the one or more peer-to-peer platform protocols; and

assigning a unique peer identifier to each of the plurality of peer nodes, wherein each peer identifier is configured for use in distinguishing the respective peer node from others of the plurality of peer nodes in the peer-to-peer environment, wherein the peer identifier of a respective peer node is independent of a network address of the respective peer node;

wherein each of the plurality of peer nodes is configured to access another of the plurality of peer nodes using the unique peer identifier of the other peer node, wherein the peer node does not use a network address of the other peer node to access the other peer node.

67. The article of manufacture as recited in claim 66, wherein the software instructions are further executable to implement binding the peer identifier corresponding to a respective one of the plurality of peer nodes to the network address of the respective peer node.

68. The article of manufacture as recited in claim 67, wherein the software instructions are further executable to implement:

unbinding the peer identifier corresponding to the peer node from the network address;

obtaining a new network address for the peer node; and

binding the peer identifier corresponding to the peer node to the new network address.

69. The article of manufacture as recited in claim 66, wherein the software instructions are further executable to implement:

at least a subset of the plurality of peer nodes accessing at least a subset of the core services in accordance with at least one of the one or more peer-to-peer platform protocols to form one or more peer groups in the peer-to-peer environment;

wherein each peer identifier is further configured for use in determining a particular one of the one or more peer groups in which a particular peer node corresponding to the peer identifier is a member peer.

70. The article of manufacture as recited in claim 66, wherein the software instructions are further executable to implement:

at least a subset of the plurality of peer nodes accessing at least a subset of the core services in accordance with at least one of the one or more peer-to-peer platform protocols to form one or more peer groups in the peer-to-peer environment; and

wherein each of the plurality of peer nodes is assigned a different unique peer identifier in accordance with the peer-to-peer platform for each of the one or more peer groups in which the peer node is a member peer.

71. The article of manufacture as recited in claim 66, wherein the software instructions are further executable to implement:

at least a subset of the plurality of peer nodes accessing at least a subset of the core services in accordance with at least one of the one or more peer-to-peer platform protocols to form one or more peer groups in the peer-to-peer environment; and;

one of the at least a subset of the plurality of peer nodes receiving a message from another of the at least a subset of the plurality of peer nodes, wherein the

other peer node is a member peer in a particular one of the one or more peer groups in which the peer node is a member peer, and wherein the message includes a peer identifier of the other peer; and

determining the particular one of the plurality of peer groups in which the other peer is a member peer from the peer identifier of the other peer.

72. The article of manufacture as recited in claim 71, wherein the message specifies a service hosted by the peer node, wherein the peer node hosts a plurality of instances of the service, wherein each of the instances of the service is hosted for a different one of the one or more peer groups of which the peer node is a member peer, and wherein the software instructions are further executable to implement the peer node providing the message to a particular one of the instances of the service hosted for the determined particular one of the one or more peer groups in which the other peer node is a member peer.

73. The article of manufacture as recited in claim 66, wherein the peer-to-peer platform defines a peer advertisement format for describing and publishing advertisements for peer nodes in the peer-to-peer environment, wherein the software instructions are further executable to implement generating a peer advertisement for one of the plurality of peer nodes, wherein the peer advertisement includes a peer identifier for the peer node.

74. The article of manufacture as recited in claim 66, further comprising at least a subset of the plurality of peer nodes hosting a plurality of resources accessible by the plurality of peer nodes in the peer-to-peer environment, wherein each resource is assigned a unique resource identifier configured for use in distinguishing the particular resource from other resources in the peer-to-peer environment.

75. The article of manufacture as recited in claim 74, wherein the plurality of resources include one or more of peer groups, content, services, applications, pipes, and

pipe endpoints, wherein pipes are communications channels between two or more peer nodes in the peer-to-peer environment, and wherein pipe endpoints are network interfaces on the peer nodes that are configured to be bound to the pipes to establish the communications channels.

76. The article of manufacture as recited in claim 66, wherein the one or more peer-to-peer platform protocols define one or more advertisement formats for describing and publishing advertisements for resources in the peer-to-peer environment, wherein the software instructions are further executable to implement:

at least a subset of the plurality of peer nodes hosting a plurality of resources accessible by the plurality of peer nodes in the peer-to-peer environment; and

generating a resource advertisement for each of the plurality of resources in accordance with the one or more peer-to-peer platform protocols, wherein at least a subset of the resource advertisements each include one or more peer identifiers each corresponding to one of the plurality of peer nodes associated with the particular resource corresponding to the particular resource advertisement.

77. The article of manufacture as recited in claim 76, wherein the resources include one or more of peer nodes, peer groups, content, services, applications, pipes, and pipe endpoints, wherein pipes are communications channels between two or more peer nodes in the peer-to-peer environment, and wherein the pipe endpoints are network interfaces on the peer nodes that are configured to be bound to the pipes to establish the communications channels.

78. The article of manufacture as recited in claim 76, wherein each resource is assigned a unique resource identifier configured for use in distinguishing the particular resource from other resources in the peer-to-peer environment, and wherein each resource

advertisement further includes a resource identifier assigned to a particular resource corresponding to the resource advertisement.

79. The article of manufacture as recited in claim 66, wherein the one or more peer-to-peer platform protocols include one or more of:

a peer discovery protocol for discovering resources in the peer-to-peer environment, wherein the resources include one or more of peer nodes, peer groups, content, services, applications, pipes, and pipe endpoints, wherein pipes are communications channels between two or more peer nodes in the peer-to-peer environment, and wherein pipe endpoints are network interfaces on the peer nodes that are configured to be bound to the pipes to establish the communications channels; and

a peer membership protocol for use by the peer nodes in applying for membership in the peer groups.

IX. EVIDENCE APPENDIX

No evidence submitted under 37 CFR §§ 1.130, 1.131 or 1.132 or otherwise entered by the Examiner is relied upon in this appeal.

X. RELATED PROCEEDINGS APPENDIX

There are no related proceedings.